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## Memorandum

To: Distribution  
From: Mark Wissinger, P.E.  
Construction Engineer  
Date: March 10, 2004  
Subject: Quality Assurance

This Construction memo is to clarify the role the Quality Assurance (QA) program plays in our job as contract administrators and how that differs from a Quality Control (QC) program that is the contractor's responsibility.

A primary function of a QC program is to identify and correct deficient materials before they are permanently incorporated into the work. Currently, contractors are often relying on our QA system to provide this function. Our specifications do not expressly prohibit this practice, nor do they clearly identify the requirements of an acceptable QC program. While we are undoubtedly receiving lower bids on a program-wide basis by contractors relying on us to provide this function, and not including the costs to monitor production in their bids, there is danger when this is done. When contractors rely on our QA system to identify deficient material, large quantities of inferior quality material can be incorporated into the work if we are not timely in our testing. We must recognize that in most instances the costs associated with having to prematurely replace deficient material that was accepted at a reduced cost, does not begin to be covered by the price reductions we assessed.

Our current specifications recognize that contractors may be relying on our QA testing to monitor quality, and have mechanisms in them to prevent the incorporation of large quantities of deficient materials into the work. One such mechanism is in Subsection 105.03.2 as follows:

*Immediately halt production following written notification when either of the following has occurred:*

- 1. Three consecutive lots for a contract item have an individual P value of 5 or more;*
- 2. Beginning with the second lot, when three tests within one lot have one or more elements outside the specification bands and the total P value for the lot is 5 or more.*

*Make adjustments to bring the product within the specification limits before resuming production. The Contractor does not have the option of accepting a price reduction in lieu of producing specification material. Continued production of non-specification material is prohibited.*

Contained within this contract language is the requirement that we perform QA testing and provide those test results to the contractor in a timely fashion. This is an important step to assure the contractor is made aware of deficiencies within the work and takes corrective action to fix the problem, particularly when they are relying on our QA testing to control quality.

For this reason it is unacceptable to stockpile QA samples for later testing. In the case of aggregate surfacing in particular, gradation testing, QA evaluation, and notification to the contractor of those QA test results, should take place as quickly as possible. QA testing and evaluation should take place no later than their completing placement of the next lot, unless it can be documented the delay to sampling or testing of the material is caused by the contractor or beyond the Department's control. Project staffing is within our control, and is not normally an acceptable reason for delaying QA testing and evaluation. We should view QA testing as a high priority for the reasons previously mentioned, and make personnel assignments accordingly.

We are in the process of reviewing our QA/QC specifications, with the goal of bringing them up to the current state of the practice on a national level. This is a large project and will take some time. Our expectation is that this review will result in substantial changes in our specifications, and a clearer definition of roles and responsibilities. Until this is accomplished we must recognize the current practice and contract requirements, and perform our QA testing in a timely manner.

What is considered an acceptable adjustment is not defined in Subsection 105.03.2. There could be countless acceptable and non-acceptable adjustments depending on the material and the individual contractor's capabilities. The Project Manager has within their discretion the determination of what is, and is not, acceptable. Insist upon a written plan of the proposed adjustment from the contractor. Insure that they follow the plan, and document the situation.

Costs associated with traffic control, water for dust control, or any other pay item required for the contractor to make adjustments to bring a material back into specification are to be borne by the contractor. We will provide additional QA testing at no charge to the contractor, however we will not suspend contract time for adjustments.

There have been questions about when QA price reductions or incentives were to be placed on progress payments. Subsection 105.03.3 C., which was supplemented on 2-1-04, states:

*Quality incentive allowances will be used to offset any price reductions. Any quality incentive allowance remaining after all price reductions have been deducted will be paid as a lump sum when all work on the item is complete.*

The intent of this contract requirement is to minimize the possibility of negative progress payments, which are difficult from an accounting standpoint to deal with, and to treat discrete items of work as a whole. For any given item in the Schedule of Items, which is subject to QA price reductions or incentives, no QA payment or price reduction is to be assessed in a progress payment until that item of work is complete. Until that item of work is complete, the contractor should be made aware of the accumulated QA adjustments for each item with each progress payment.

In order to ensure that the QA evaluation performed on any given material is

statistically valid we must witness the contractor taking the samples at the appropriate random intervals. Failure of the contractor to take the samples at the required interval is cause for a shutdown notice. It is the contractor's responsibility to take the samples in accordance with approved techniques. If the contractor is clearly not using proper technique in their sampling methods, our responsibility ends with documenting the improper technique and alerting the contractor in writing of what we have observed. If samples are clearly being taken in an unsafe manner, we will notify the contractor to immediately stop production until the safety issue is addressed, and samples can be taken safely at the proper interval. The Project Manager will determine what is, and is not, an acceptable solution to address safety concerns. Insist upon a written plan of the solution from the contractor. Ensure that they follow the plan, and document the situation.

There has been some confusion about the intent of the Special Provision entitled, PRICE REDUCTION CALCULATION. This specification is intended to lessen the effect upon the Department of substantial unbalancing of bids, which is done with the intent of reducing the contractor's exposure to price reductions on items subject to QA evaluation. The Base Unit Prices found in this specification will vary based upon the estimated cost of the item on any given project. Please note that this Special Provision merely supplements Subsection 105.03.2, it does not rescind any portion of it. Just because a contract item does not have a Base Unit Price specified does not mean that it is not subject to QA evaluation and price reductions or incentives. In the case that an item is not listed in this Special, but is subject to QA, the evaluation and subsequent incentive or price reduction would be based upon the unit bid price.

This memo is rescinded five years from the date of issuance if not updated. If you have questions please contact me.

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